PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D   0 6 FEB 2006

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Applicant's or agent's file reference PB-47400	**FOR FURTHER ACTION**	See Form PCT/IPEA/416

International application No. PCT/EP2004/014487	International filing date *(day/month/year)* 17.12.2004	Priority date *(day/month/year)* 22.12.2003

International Patent Classification (IPC) or national classification and IPC
G05B19/12, G05B19/418, B29D11/00, B65B25/00

Applicant
BAUSCH & LOMB INCORPORATED et al.

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

   a. ☒ *sent to the applicant and to the International Bureau)* a total of 3 sheets, as follows:

      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

   ☒ Box No. I   Basis of the opinion

   ☐ Box No. II   Priority

   ☐ Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   ☐ Box No. IV   Lack of unity of invention

   ☒ Box No. V   Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   ☐ Box No. VI   Certain documents cited

   ☐ Box No. VII   Certain defects in the international application

   ☐ Box No. VIII   Certain observations on the international application

Date of submission of the demand 21.10.2005	Date of completion of this report 03.02.2006
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Gardella, S Telephone No. +49 89 2399-6997

Box No. I   Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:

   ☐ international search (under Rules 12.3 and 23.1(b))
   ☐ publication of the international application (under Rule 12.4)
   ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

   Description, Pages

1-9, 11	as originally filed
10	filed with the demand

   Claims, Numbers

1-10	filed with the demand

   Drawings, Sheets

1/1	as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   ☐ the description, pages
   ☐ the claims, Nos.
   ☐ the drawings, sheets/figs
   ☐ the sequence listing *(specify)*:
   ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   ☐ the description, pages
   ☐ the claims, Nos.
   ☐ the drawings, sheets/figs
   ☐ the sequence listing *(specify)*:
   ☐ any table(s) related to sequence listing *(specify)*:

   * *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

   Novelty (N)   Yes: Claims   1-10
                                    No: Claims

   Inventive step (IS)   Yes: Claims   1-10
                                    No: Claims

   Industrial applicability (IA)   Yes: Claims   1-10
                                    No: Claims

2. Citations and explanations (Rule 70.7):

   see separate sheet

Re Item V: Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following document:

    D1: EP-A-1 052 084 (JOHNSON & JOHNSON VISION CARE, Inc.) 15 November 2000

2. The subject-matter of independent claim **1** relates to a method for controlling a production line for the manufacture and/or packaging of contact lenses, which production line simultaneously processes at least two lots. The method involves the usage of at least three specific shift registers - namely: a location shift register, a lot data shift register and a condition shift register - which are indexed simultaneously as the lenses pass down the production line.

    Document **D1**, which is regarded as being the closest prior art to the subject-matter of claim **1**, discloses a method for controlling a production line for the manufacture and/or packaging of contact lenses, which is functionally similar to the method being claimed. However, this method uses one or more databases containing the information concerning the location, the lot data and the condition of each lens in the production line.

    The hardware implementation of the invention, with its specific choice of shift registers, presents several advantages with respect to the solution of the prior art: for instance, it allows faster operation of the production line and simplifies the processing of control data.

    As a result, the subject-matter of independent claim **1** is not only new but involves also an inventive step with respect to the disclosure of document **D1**. The requirements of Articles **33(2)** and **(3)** PCT are therefore fulfilled.

2. Claims **2-10** are dependent on claim **1** and as such also meet the requirements of the PCT with respect to novelty and inventive step.

3. The subject-matter of claims **1-10** is industrially applicable (Article **33(4)** PCT).

4. All the requirements of Article **33(1)** PCT are thus met.

The location and condition shift registers are binary shift registers and will be filled by "1" or "0". In the case of the location shift register "1" represents the fact the cell contains product and "0" means the cells is empty. In the condition shift register "1" represents an acceptable product and "0"

5   represents an unacceptable product.

The lot data shift register is a non-binary shift register and contains data pertaining to the manufacture and/or prescription of the contact lens. The lot shift register may contain the data necessary for the manufacturing process or

10   may comprise a pointer or link to a computer file containing the data. For convenience, the numeral "3" represents the lot data for the first lot and the numeral "5" represents the data for the second lot.

The arrow marked A represents a sensor in the production line for

15   determining whether the product passes or fails a particular test. The sensor may detect the presence or absence of product, read a bar code and compare with lot data information, inspect a lens e.g. as disclosed in WO 2004/056555, detect the presence of a label or a blister package etc. If the product passes the test the condition shift register will be marked "1" and if the product fails

20   the test the condition shift register will be marked as "0".

The arrow marked B represents a reject mechanism on the production line. In the event the condition shift register is marked "1" the reject mechanism will not operate. In the event the condition shift register is marked "0" the reject

25   mechanism will operate ejecting the product from the production line and therefore the location shift register will be altered from "1" to "0". Diagrams (a) and (b) illustrate this concept with Diagram (a) showing detector A failing a product in the cell and Diagram (b) shows the production line after the shift registers have been indexed by one cell showing the reject mechanism B

30   ejecting the product from the production line. The reject mechanism may comprise a sensor to confirm the product has been ejected. The ejection of the product results in the location register being marked "0".

EPC - DG 1

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(94)

AMENDED SHEET

24/10/2005

CLAIMS

1.   A method for controlling a production line for the manufacture and/or packaging of contact lenses which production line simultaneously processes at least two lots, the method comprising dividing at least a portion of the production line into a series of cells through which the contact lenses pass sequentially, and providing a control system comprising at least three shift registers each containing information about each of said cells, including:

(a)   a location shift register which indicates whether a cell should be empty or occupied,

(b)   a lot data shift register which is a non-binary shift register and contains manufacturing and/or prescription data about the contact lens which should be in the cell and

(c)   a condition shift register which provides an indication of the condition of the lens in the cell,

and simultaneously indexing all of said shift registers as a lens passes down the production line from one cell to the next cell.

2.   A method as claimed in Claim 1 which comprises detecting the presence or absence of product in a cell and comparing the result with the information for that cell in the location shift register.

3.   A method as claimed in Claim 2 in which a plurality of adjacent empty cells is inserted at the start and end of a manufacturing lot.

4.   A method as claimed in Claim 3 in which detection of said plurality of empty cells is used to trigger a processing event.

5.   A method as claimed in Claim 4 in which the processing event is selected from resetting a processing station, wiping data from a processing station and instigating a reporting action.

5   6.   A method as claimed in any preceding claim in which a gap comprising a predetermined number of empty cells is inserted between successive manufacturing lots on the production line and the control system comprises a gap defence mechanism including detectors and counters to monitor said gap as it proceeds down the production line.

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7.   A method as claimed in any preceding claim in which information from the lot data shift register is used to control the activity of a cell.

8.   A method as claimed in any preceding claim which comprises the step

15   of inspecting the product in a cell and/or monitoring the production activity in a cell and comparing the resulting data with data in the lot data shift register.

9.   A method as claimed in any preceding claim in which information in the condition shift register is used to trigger ejection of a product from the

20   production line.

10.   A method as claimed in Claim 9 in which ejection of product from the production line causes the location shift register to change to signify the cell is empty of product.